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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,557	01/03/2001	Earl Frederick Barrick	084377/0103	9807

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GEORGE MASON UNIVERSITY  
OFFICE OF TECHNOLOGY TRANSFER, MSN 5G5  
4400 UNIVERSITY DRIVE  
FAIRFAX, VA 22030

EXAMINER

RAMIREZ, JOHN FERNANDO

ART UNIT	PAPER NUMBER
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3737

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

**Office Action Summary**

Application No.

09/752,557

Applicant(s)

BARRICK ET AL.

Examiner

John F. Ramirez

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-5,7-13,15-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7-13 and 15-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

After a review of applicant's remarks filed on February 20, 2006, the examiner of record acknowledges the amendment to the claims on pages 10-13. Accordingly, claims 2, 6, and 14 have been canceled.

Applicant should submit an argument under the heading "Remarks" pointing out disagreements with the examiner's contentions. Applicant must also discuss the references applied against the claims, explaining how the claims avoid the references or distinguish from them.

In relation to claims 1, 12, 13, 16, 18, 26, and 27, it is noted for the record that a recitation with respect to the manner in which an apparatus is intended to be employed does not impose any structural limitation upon the claimed apparatus which differentiates it from a prior art reference disclosing the structural limitations of the claims. In re Pearson, 494 F. 2d 1399, 181 USPQ 641 (CCPA 1974); In re Casey, 370 F. 2d 576, 152 USPQ 235 (CCPA 1967). Accordingly, since claims 1, 12, 13, 16, 18, 26, and 27 is an apparatus claim, and not a method claim, the intended uses disclosed by the applicant do not provide the necessary patentable weight to overcome the pending rejection.

It is noted that the amendment to claim 1 does more accurately claim the invention. However, such limitation such as "externally" and "imageable fiducials coupled to the first curvature sensor" are insufficient to overcome the art reference

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previously applied as discussed below. In column 2, lines 33-52, the specifications of the Vilsmeier et al. patent specifically states:

35 Preferably, the position sensor is inserted into the body with the aid of the information obtained from a computer tomograph or nuclear spin tomograph or some other diagnostic examination, such as e.g. palpation, and its end or a defined point on the sensor is positioned in the vicinity of the tumor. Subsequently, the position sensor may be firmly anchored or fixed in place e.g. in the tumor or in the tissue  
40 bordering the tumor or in or on a bone. This may be done e.g. by means of supporting or clamping elements externally movable at the inserted position sensor. Afterwards, the location of the position sensor relative to the target point in the target volume, e.g. spacing and directional vector, is  
45 determined by means of a suitable technique, e.g. with a second computer tomograph, thus enabling the location of the position sensor relative to the target point to be defined.

It may be necessary to reposition the end or other location of the position sensor should the distance between sensor  
50 and target point seem too large or if it cannot be assured that tumor and sensor move in the same way in the body, i.e. not stationary relative to each other.

And in column 2, lines 23-33 of the Vilsmeier et al. patent specifications states:

25 sensor. Thus, e.g. the curvature of the sensor at any desired point along its contour may be detected so that one or more fiducial points on the sensor can be easily detected which can be brought into a position relative to a tissue to be irradiated which does not shift out of place or only negligibly so. Once such a position sensor has been inserted in the body in the target site to be irradiated and suitably  
30 positioned, precise irradiation of the desired location can be performed using the position signals of the sensor which, preferably, are capable of detecting the precise position of the tissue to be irradiated at any point in time.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

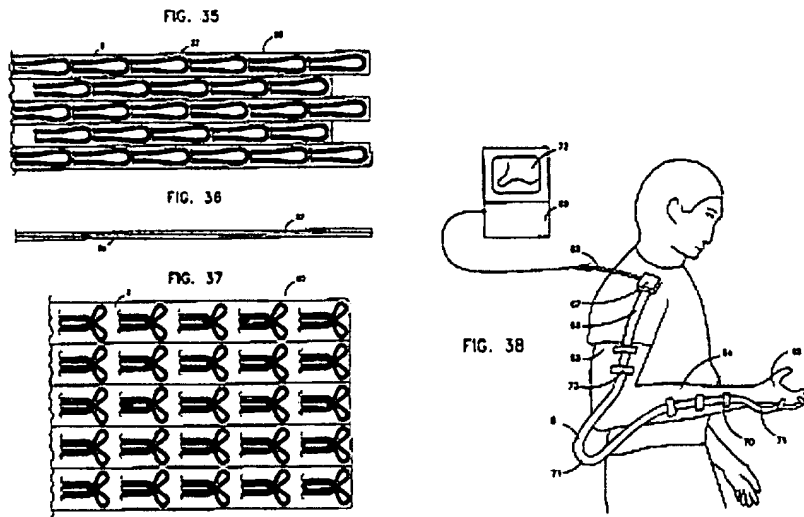
Claims 1, 3-5, 7-13, 15-17, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vilsmeier et al. (US 6,611,700) in view of Ferre et al. (US 5,967,980). Vilsmeier et al. teaches all the limitations of the claimed subject matter except for mentioning specifically an imageable fiducials and a sensor providing an output readable by a computer.

However, an imageable fiducials and a sensor providing an output readable by a computer are conventional in the art as evidenced by the teachings of Ferre et al. (US 5,676,673).

The Ferre et al. patent teaches a tracking and imaging system that uses radiopaque fiducial markers (col. 6, line 64 – col. 7, line 18) and a sensor providing an output readable by a computer (see abstract).

Based on the above observations, for a person of ordinary skill in the art, modifying the method disclosed by Vilsmeier et al., with the above discussed enhancements would have been considered obvious because such modifications would have provided a better position monitoring of a medical instrument with respect to a patient's body avoiding misaligned tracking of the device.

Claims 18 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vilsmeier et al. in view of Danisch (US 6,127,672).



Vilsmeier et al. teaches all the limitations of the claimed subject matter except for mentioning specifically a device for generating a frame of reference comprising a ribbon, the ribbon being composed of one or a combination of plastic, metal wire, metal strip, fabric, rubber, synthetic rubber, nylon, thread, glass, or paper, a plurality of fiducials attached at known inter-fiducial distances along the ribbon; and an attachment fixture coupled to the ribbon at a known position with respect to the plurality of fiducials, a garment configured to be applied to a body, the garment comprising, at least one curvature sensor, and a plurality of filaments coupled to the plurality of curvature sensors to form a mesh, and a communication device configured to communicate the output of the curvature sensors to a distant receiver.

However, a device for generating a frame of reference comprising a ribbon, the ribbon being composed of one or a combination of plastic, metal wire, metal strip, fabric, rubber, synthetic rubber, nylon, thread, glass, or paper, a plurality of fiducials attached

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at known inter-fiducial distances along the ribbon; and an attachment fixture coupled to the ribbon at a known position with respect to the plurality of fiducials, a garment configured to be applied to a body, the garment comprising, at least one curvature sensor, and a plurality of filaments coupled to the plurality of curvature sensors to form a mesh, and a communication device configured to communicate the output of the curvature sensors to a distant receiver are conventional in the art as evidenced by the teachings of Danisch (US 6,127,672).

The Danisch patent teaches a device for generating a frame of reference comprising a ribbon, the ribbon being composed of one or a combination of plastic, metal wire, metal strip, fabric, rubber, synthetic rubber, nylon, thread, glass, or paper, a plurality of fiducials attached at known inter-fiducial distances along the ribbon; and an attachment fixture coupled to the ribbon at a known position with respect to the plurality of fiducials.

Based on the above observations, for a person of ordinary skill in the art, modifying the method disclosed by Vilsmeier et al., with the above discussed enhancements would have been considered obvious because such modifications would have provided a position and motion sensing device that can conveniently track and identify the location and geometric configuration of objects.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John F. Ramirez whose telephone number is (571) 272-8685. The examiner can normally be reached on (Mon-Fri) 7:30 - 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JFR  
06/23/06

  
BRIAN L. CASLER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700